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# blueiot

# BlueIoT Anchor

## BA3000-t

USER MANUAL V1.0

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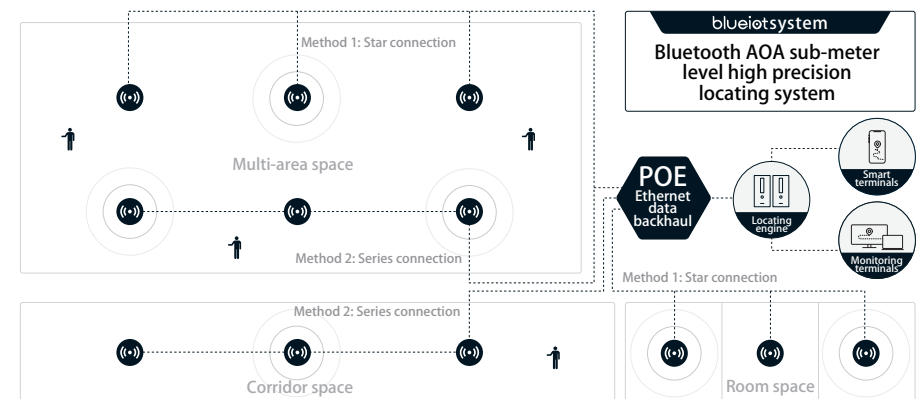
## 1. Overview

### 1.1. Product Introduction

BA3000-t High Precision Indoor Bluetooth Location Anchor uses Bluetooth Low Energy (BLE) technology with advanced AOA/AOD algorithm and standard, which can achieve functions such as precise locating, trace uploading and status collection of personnel and objects indoor, while having high accuracy, high concurrency, low power consumption, high compatibility and easy quick deployment, it is an effective solution for the demands arising from Internet of Things, for precise spatial and status perception as well as intelligent control and management.

### 1.2. Typical Applications

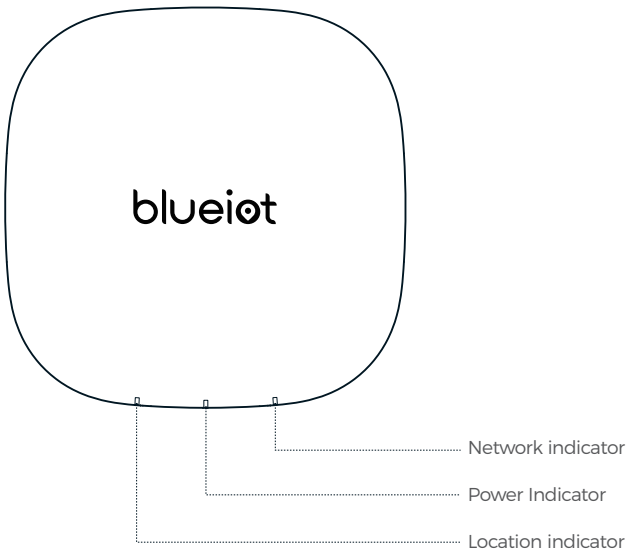
The typical application scenarios and accuracies of this product are as follows:



2. Panel and Port

2.1. Anchor Front Panel

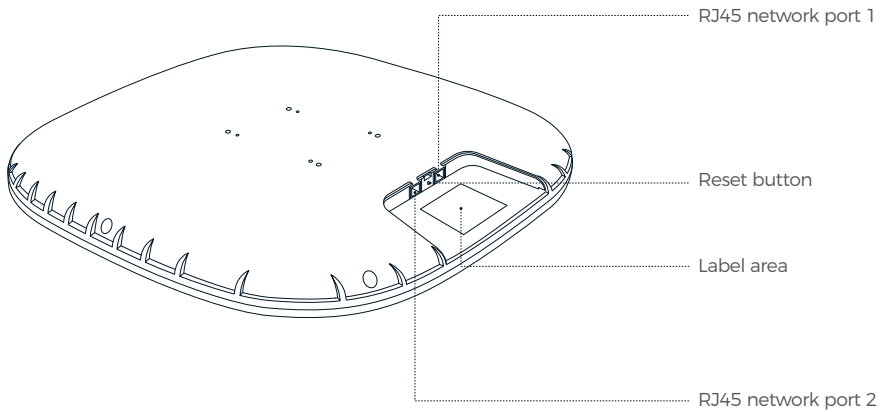
The diagram and meanings of the product front panel are as follows.



Number	Meaning	Status Description
1	Network Indicator	Green when connected through ethernet. Permanent OFF: no connection or connection failure. Permanent ON or Blinking: normal network connection.
2	Power Indicator	Permanent Green: normal power supply. Permanent OFF: abnormal power supply.
3	Location Indicator	Permanent Green: no tag connection or tag connection failure. Flashing Green: normal tag connection.

2.2. Anchor Back Panel

The back panel of the Bluetooth AOA Location Anchor is used for installation and unmounting, as shown in below figure.

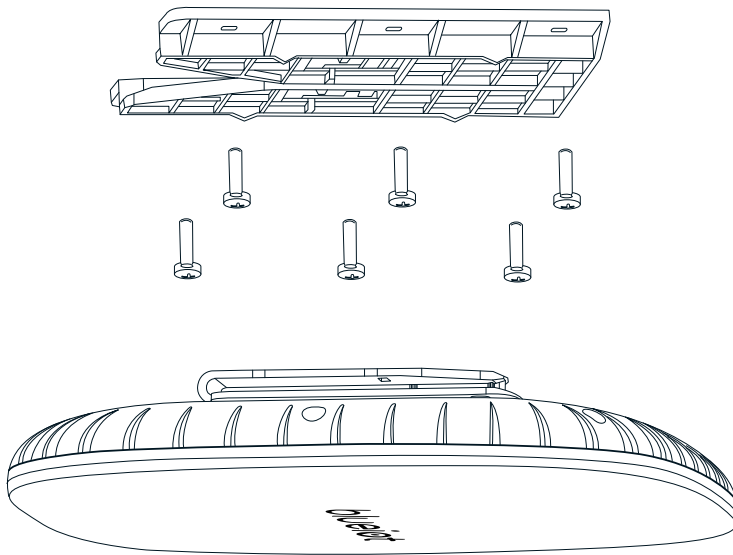


Number	Meaning	Status Description
1	RJ45 Port	Multiplexing port for POE power supply input or network transmission; can connect to a standard POE Switch.
2	Reset Button	When powered on, press and hold the button for 10 seconds, the anchor will reset to factory default settings and reboot. All indicators on the front panel flash three times during reset.
3	Label Area	Product ID and information.

### 3. Installation and Power Supply

#### 3.1. Installation

This product is generally mounted on ceiling, but can also be suspended or installed otherwise depending on the specific structure of the building ceiling. Before installation, make sure that the connecting structure can withstand a downward pull of at least 50 Newton (N). This product should be installed at a maximum height of 20 meters and can be installed in method illustrated below:



Fix the location anchor mount with wall plug at specific positions (according to the technician's requirements), and then slide the anchor in place along the guideway on the mount.

The location anchor collects and measures incoming tag signals, so the installation location and the surrounding should meet certain standards. Note that:

- There should be no electromagnetic shielding/jamming devices (e.g. mobile phone

jammer, WiFi jammer) in the vicinity of the installation location.

- Avoid objects that can easily cause signal reflection, such as large size metal, large screen.
- The location anchor should have large visual coverage without obstruction. Never install the location anchor above ceiling tiles (metal material like aluminum tile, or non-metallic material such as gypsum board and glass panel), low-voltage cable trays, fire ducts, air conditioning ducts, indoor green plants or other obstructions.
- The location anchor should be installed in the correct direction with the front panel facing downwards instead of upright or tilted.

#### 3.2. Power Supply

This product adopts IEEE 802.3af standard version of POE power supply, uses Category 5e (CAT 5e) network cable. Simply connect to a standard POE Switch or a location anchor to achieve power supply to the location anchor. When connected, the power indicator of the location anchor is green permanently.

Note that:

- The POE power supply should not be more than 100 meters away, and should preferably be controlled within 80 meters.
- Easy-to-use circuit breakers shall be incorporated into the wiring system

## 4. Network Connection

### 4.1. Wired Network

There are mainly two types of wiring methods between the location anchor and the server, as shown in Figure 4.1.1 and 4.1.2:



Figure 4.1.1 Directly Connect via Network Cable

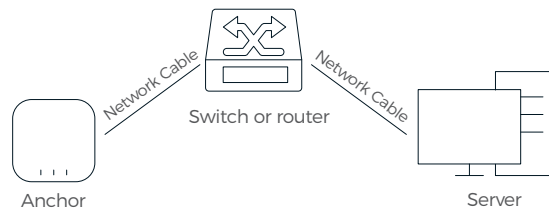


Figure 4.1.2 Connect via Network Switch or Router

### 4.2. Network Configuration

The location anchor uses fixed IP address to access the network, and does not support DHCP function. The default factory IP address of the anchor is "192.168.1.X" at port "48200". The afore "X" in the IP address changes with the product, which can be obtained from the information label on the product packaging.

Modify the IP address of your computer before changing the network settings of the location anchor so that it is in the same network segment as the anchor. It is recommended that the computer's network be configured as:

IP address: 192.168.1.11

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Specific parameters of the location anchor can be configured via the "Anchor Configuration" module in the "Server Software". Please refer to the related software manual for details.

## 5. Data Collection

The Bluetooth anchor is mainly used to receive and collect the locating and data information sent by the Bluetooth tag. Its effective collection area is related to the on-site deployment, and the number of tags that can be collected is related to the frequency of tag data transmission.

When the tag leaves the effective collection area, the locating accuracy will be reduced or cannot be located, and the data information cannot be transmitted. When the tag returns to the effective collection area, the locating and data information transmission can be resumed.

## 6. Important Safety Information for BlueIoT Anchor

**WARNING:** Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to BlueIoT Anchor or other property. Read all the safety information below before using BlueIoT Anchor.

**Handling** Handle BlueIoT Anchor during transportation, installation and other cases with care. BlueIoT Anchor contains sensitive electronic components and can be damaged if dropped, burned, punctured, or crushed.

**Repairing** Don't open BlueIoT Anchor and don't attempt to repair BlueIoT Anchor yourself. Disassembling BlueIoT Anchor may damage it, and may cause injury to you. If BlueIoT Anchor is damaged or malfunctions, contact local distributor for help.

**Powering** BlueIoT Anchor uses IEEE 802.3af POE for power supply. Please use the original adapter or selected adapter that meets the above specifications. It's important to keep BlueIoT Anchor and the power adapter installed in a well-ventilated area. Using a BlueIoT Anchor power adaptor that's damaged, using a third-party selected powering solution which doesn't meet IEEE 802.3af POE or local safety regulation requirements, or powering BlueIoT Anchor when moisture is present, can cause fire, electric shock, injury, or damage to BlueIoT Anchor or other property.

**Prolonged heat exposure** BlueIoT Anchor complies with applicable surface tempera-

ture standards and limits. BlueIoT Anchor will become warm when plugged in to a power source.

**Radio frequency exposure** BlueIoT Anchor uses radio signals to connect to Bluetooth Tags. BlueIoT Anchor has been tested and meets applicable limits for radio frequency (RF) exposure.

**Radio frequency interference** Observe signs and notices that prohibit or restrict the use of electronic devices. Although BlueIoT Anchor is designed, tested, and manufactured to comply with regulations governing radio frequency emissions, such emissions from BlueIoT Anchor can negatively affect the operation of other electronic equipment, causing them to malfunction. Unplug the BlueIoT Anchor power adaptor and the POE cable when use is prohibited, or when asked to do so by authorities.

**Medical device interference** BlueIoT Anchor contains components and radios that emit electromagnetic fields. These electromagnetic fields may interfere with medical devices, such as pacemakers and defibrillators. Consult your physician and medical device manufacturer for information specific to your medical device and whether you need to maintain a safe distance of separation between your medical device and BlueIoT Anchor. Stop using BlueIoT Anchor if you suspect they are interfering with your medical device.

**Not a medical device** BlueIoT Anchor is not a medical device and should not be used as a substitute for professional medical judgment. It is not designed or intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of any condition or disease. Please consult your healthcare provider prior to making any decisions related to your health.

**Not an absolutely reliable equipment** BlueIoT Anchor is not intended for use where the failure of the device could lead to death, personal injury, disease transmission or severe environmental damage.

**Explosive and other atmospheric conditions** Powering on BlueIoT Anchor in any area with a potentially explosive atmosphere, such as areas where the air contains high levels of flammable chemicals, vapors, or particles (such as grain, dust, or metal powders), may be hazardous. Exposing BlueIoT Anchor to environments having high concentrations of

industrial chemicals, including near evaporating liquified gasses such as helium, may damage or impair BlueIoT Anchor functionality. Obey all signs and instructions.

**Choking hazard** Some BlueIoT Anchor parts may present a choking hazard to small children. Keep these parts away from small children.

## 7. Important Handling Information for BlueIoT Anchor

**Exposure to liquid** BlueIoT Anchor is not water resistant. Always avoid exposing BlueIoT Anchor to liquids and moisture.

**Cleaning and care** Keep BlueIoT Anchor clean and dry, but avoid damaging BlueIoT Anchor. Observe the following:

- Don't clean BlueIoT Anchor while it's powering.
- Don't dry BlueIoT Anchor using any external heat source (for example, a hair dryer).
- Don't use cleaning products, ultrasonic cleaners, or compressed air when cleaning your BlueIoT Anchor.

**Using buttons, connectors, and ports** Never apply excessive pressure to a button on BlueIoT Anchor, or force a powering connector into a port, because this may cause damage that is not covered under the warranty. If the connector and port don't join with reasonable ease, they probably don't match. Check for obstructions and make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.

**Operating temperature** BlueIoT Anchor is designed to work best in ambient temperatures between -4°F and 158°F (-20°C and 70°C) and be stored in temperatures between -40°F and 185°F (-40°C and 85°C). BlueIoT Anchor can be damaged if stored or operated outside of these temperature ranges. Avoid exposing BlueIoT Anchor to dramatic changes in temperature or humidity.

**Indoor Use** BlueIoT Anchor is designed for indoor use only.

8. Disposal and Recycling Information for BlueIoT Anchor

BlueIoT Anchor disposal and recycling

Your BlueIoT Anchor should not be disposed of with household waste. Dispose of your BlueIoT Anchor in accordance with local environmental laws and guidelines.



European Union—Disposal Information

The symbol above means that according to local laws and regulations your product and/or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product and/or its battery at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

9. Limited Warranty

Warranty does not apply to:

Surface damage, such as scratches, dents and depressions.

- Damage caused by accident, abuse, misuse, inflow, flooding, fire or external factors.
- Damage caused from repairing by non-BlueIoT authorized warranty personnel.
- Damage caused by modification or alteration of the product without the seller's written consent.

In addition, the seller reserves the right to refuse the warranty application for products or services obtained and/or used in violation of the laws of any country. This warranty provides you with specific legal rights, but this right may vary from region to region. The seller will not be responsible for any accidental, special, indirect or derivative damage

(which may result from use, misuse, don't know how to use or product defects). The seller reserves the right to overhaul or replace (new products or newly overhauled replacement products) device or software. This is the sole and exclusive remedy for any breach of the warranty terms. Please consult your local seller's authorized seller when applying for warranty service.

【Warranty card】

Product name (including spare parts)	Limited warranty period
BlueIoT Anchor (as entire product)	1 year
Accessories (e.g. adapter, charging cable)	No warranty

\*Non-human factors, one-year warranty period; the cost of logistics (shipment) shall be borne by the users.

**Note:** If your device is purchased through a local seller, please contact the local seller for the warranty service acquisition method. If your device was purchased directly by the manufacturer, please get in touch via: [info@blue-iot.com](mailto:info@blue-iot.com).

**Disclaimer:** Depending on the design of usage location / environment and the way how it is used, there could be false positives due to tissue, walls, structures or other factors and false negatives due to bodily interference, electromagnetic interference, or other factors. BlueIoT warranties that the BlueIoT Anchor performs to the requirements listed on the BlueIoT Anchor spec sheet. All sales are final.

## 10. IP Statement

### Trademark statement

"BlueIoT" trademarks, logos, and trademark combinations are registered trademarks of BlueIoT(Beijing) Technology Co., Ltd.

### Liability statement

To the maximum extent allowed by law, the products (including hardware, software, etc.) described in this manual are provided "as is", there may be defects, errors or malfunctions, the company does not provide any form of express or implied warranty. The "BlueIoT" series of products (hereinafter referred to as "equipment") provided by our company are management aids, which cannot replace the safety management system, measures and rescue programs of dangerous operations, nor can they replace the supervision system in operation management and measures.

During the use of this product, please remind the operator not to reduce safety awareness due to the use of auxiliary tools, timely charge the device when the device is low, and regularly check the device. If you have any questions, please contact our company for repair or replacement.

## 11. Responsibility Statement

- The product is an auxiliary tool, which cannot replace any safety management system, measure and rescue solution for hazardous operation or supervision system and measure for operation management. Please do not reduce safety awareness while using the product, and timely charge the product and check its operation state when the power is low.
- Measurement data and results of this product are for reference only. Products described in the Manual (including hardware and software) are all provided in the "current situation" within the maximum range allowed by laws, and there may exist defects, errors or faults. The Company does not provide express or implied guarantee in any form, or compensate for any special, incidental, accidental or indirect damages caused by using the Manual or products of the Company.
- The Company does not undertake any responsibility for any damage to personal or property interests of one's own or third party caused by failing to use the product according to the Manual and warning statement.
- The Company does not undertake any responsibility for any product operation abnormality, information disclosure or other problems caused by network attack, hacker virus infection or other unknown risks due to Internet access during product use.
- The product promoting pictures and advertisements are used only for instruction and promotion. Physical products prevail in all cases.
- The data in the Manual are all theoretical values obtained by the internal lab of BlueIoT in specific testing environments. However, there may exist differences due to individual product differences, software version, using conditions and different environmental factors, and actual using conditions shall prevail in all cases.
- The Company will not send special notice in the case of being necessary to modify and adjust the above.
- For more information, please contact [info@blue-iot.com](mailto:info@blue-iot.com).



## 12. Appendix - Basic Specifications

BA3000-t BlueIoT Anchor	
Frequency	2.4GHz - 2.485GHz
Locating Accuracy	Up to 0.1 m
Interface Type	Ethernet RJ45
Interface Speed	10/100Mbps
Interface Protocol	UDP/TCP
Interface Connect Distance	Maximum 100m
Transmission medium	CAT5+
Dimensions	220mm×220mm×32mm
Weight	620g
Power Supply Interface	IEEE 802.3af POE
Voltage / Current	48V / 0.5A
Working temperature	-20°C - 70°C
Storage temperature	-40°C - 85°C
Working humidity	10% - 90% non condensing
Storage humidity	5% - 95% non condensing

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

The devices has been evaluated to meet general RF exposure requirement , the device can be used in portable exposure condition without restriction

